The relationship between CMEs and prominence eruption from SOHO and Tenerife observations

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From multi-wavelength studies of eruptions of prominences observed by Yohkoh, SoHO and ground-based observatories, we find a good correlation between prominence eruptions and CMEs (i.e. May 1 1996, Sept 25 1996, May 31 1997). Focusing our interest on their temporal relationship, we observe that it is not clear that filament eruption is prior to the CME. Nevertheless they are both signatures of destabilization of the global coronal magnetic field.

The magnetic configuration in the corona should involve the initial presence of a twisted flux tube. The eruption could be driven by a fast increase of the poloidal field in the flux tube or by photospheric shearing motions of the flux tube.